UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,330	04/12/2004	Tadashi Ohira	CFA00079US	4472

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EXAMINER
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ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/823,330	OHIRA, TADASHI
	Examiner	Art Unit
	EUENG-NAN YEH	2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>06 March 2009</u>.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>7-10,12,19 and 22</u> is/are pending in the application.
    4a) Of the above claim(s) <u>10</u> is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) <u>7-9,12,19,22</u> is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March

6, 2009 has been entered.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or
> composition of matter, or any new and useful improvement thereof, may obtain a
> patent therefor, subject to the conditions and requirements of this title.

3.   Claim 19 is rejected under 35 U.S.C. 101 as not falling within one of the four

statutory categories of invention. Supreme Court precedent (*Diamond v. Diehr*, 450 U.S.

175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70

(1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876)) and recent Federal Circuit decisions (*In*

re Bilski, 88 USPQ2d 1385 (Fed. Cir. 2008)) indicate that a statutory "process" under 35

U.S.C. 101 must (1) be tied to another statutory category (such as a particular

apparatus), or (2) transform underlying subject matter (such as an article or material) to

a different state or thing. While the instant claims recite a series of steps or acts to be

performed, the claims neither transform underlying subject matter nor positively tie to

another statutory category that accomplishes the claimed method steps, and therefore

do not qualify as a statutory process.   In order for a process to be "tied" to another

statutory category, the structure associated with another statutory category must be

positively recited in a step or steps significant to the basic inventive concept, and NOT

just in association with statements of intended use or purpose, insignificant pre or post

solution activity, or implicitly. For example method claim 19 performs the steps

comprising: inputting data, transforming data, generating pseudo-coded data, switching

data, and multiplexing data, wherein none of above steps positively "tied" to another

statutory category. Secondly, a qualifying transformation is NOT recited for at least the

reason that there is no external depiction of the transformed/modified data, such as but

not limited to a visual display.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to be
> patented and the prior art are such that the subject matter as a whole would have been obvious
> at the time the invention was made to a person having ordinary skill in the art to which said
> subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

5.   Claims 7-9, 12, 19, and 22 are rejected under 35 U.S.C. 103(a) as being

unpatentable over the combination of Hannuksela et al. (US 2001/0040700 A1), Klein

Gunnewiel et al. (US 2003/0086622 A1), and Lee (US 2003/0156198 A1).

        Regarding claims 7 (apparatus), 19 (method), and 22 (computer-readable

medium), Hannuksela discloses a data process system comprising:

        a) input image data (as depicted in figure 3, numeral 101 "an input 101 for

receiving a video signal from a camera or video source (not shown) of the terminal 1" in

paragraph 46, line 3);

        b) first coding means for coding the input image data by transforming the input

image data into frequency components in units of blocks and coding said frequency

components by adaptively using an intracoding mode and an interceding mode ("Block

layer data consist of uniformly quantised discrete cosine transform coefficients, which

are scanned in zigzag order, processed with a run-length encoder and coded with

variable length codes. MPEG-2 and MPEG-4 layer hierarchies resemble the one in

H.263" in paragraph 15, line 1. As depicted in figure 3, numerals 102, 103, and 104 "[a]

switch 102 switches the encoder between an INTRA-mode of coding and an INTER-

mode. The encoder part 100 of the video codec 10 comprises a DCT transformer 103, a

quantiser 104 ..." in paragraph 46, line 4. Thus, blocks 102-104 are the first coding

unit);

        e) a multiplexing unit configured to output a stream of multiplexed data obtained

by storing the pseudo-coded reference data into a user data area in a video plane

b]object in a stream of the image data encoded by the first coding unit in a case where

the coding process is performed in the intercoding mode, and to output a stream of data

in which the pseudo-coded reference data is not stored in a case where the coding

process is performed in the intracoding mode ("Encoders can use this indicator to

instruct decoders which pictures resemble the current motion compensation reference

picture so well that one of them can be used as a spare reference picture if the actual

reference picture is lost during transmission ... This "spare" reference picture may be

used by a decoder to decode the current frame if the default reference picture is lost for

some reason. The spare reference picture number may be in respect of the whole

picture or part of a picture. In the former case, typically the spare reference picture

number is included in a picture header. In the latter case the spare reference picture

number is included in the picture segment headers or macroblock headers of the

picture. In a preferred implementation of the invention, the video signal is encoded

according to the H.263 standard and the indicator is included in the Supplemental

Enhancement Information" in paragraphs 19-20. See also, "Thus an indicator is

provided for forwardly predicted frames not for backwardly predicted frames" in

paragraph 22, line 1. Wherein this forwardly predicted frames are applicable to

intercoding frames. Thus, for intracoding mode, there is no spare reference picture

needed to output data stream. For intercoding mode, spare reference picture data used

to represent the lost reference picture are multiplexed output data stream in the picture

header, the picture segment headers or macroblock headers of the first coding unit. As

shown in figure 2, numeral 50 is a multiplexing unit).

Hannuksela does indicate the need of spare reference picture for the intercoding mode. Hannuksela does not explicitly disclose the spare reference picture, i.e. pseudo-coded reference data, with frequency components and the switching unit for the intercoding mode. Furthermore, Hannuksela does not explicitly teach the frequency limitation.

Klein Gunnewiek, in the same field of endeavor of video encoder ("particularly to a video encoder which uses efficient spatial scalable compression" in paragraph 1, line 2), teaches an scalable enhancement codec as depicted in figure 3, numeral 314 based on local decoding #338 (inverse quantization), #340 (inverse DCT), and #348 on the input image data coded by first coding means such as #330 (DCT) and # 332 (Q) or first coding means from Hannuksela figure 3 #103 (DCT) and #104 (Q) to obtain the reconstructed image data then perform second coding such as #368 (DCT) and #370 (Q) under the bitrate controller #374. As depicted in Klein Gunnewiek figure 3, numeral 366 is the switching to output enhancement data, i.e. pseudo-coded reference data, for the P-frame or B-frame, i.e. intercoding mode, processing.

It would have been obvious at the time the invention was made that, one of ordinary skill in the art would have been motivated to provide the data processing system Hannuksela made with bitrate controlled scalable enhancement technique as taught by Klein Gunnewiek, not only it "can be used to improve error resilience in a transport system" in Hannuksela paragraph 124, line 1, but also "providing more efficient spatial scalable compression schemes which reduces the necessary bitrate of the encoder" in Klein Gunnewiek paragraph 9, line 3.

The Hannuksela and Klein Gunnewiek combination does not explicitly teach the frequency limitation.

Lee, in the same field of endeavor of video coding ("particularly, to a stream-based bitrate transcoder for MPEG bitstreams" in paragraph 3, line 2), teaches the importance of bitrate control "[b]itrate transcoding is a very powerful tool to adapt the dynamic bitrate changes in networked multimedia applications, especially in a heterogeneous networks environment" in paragraph 5, line 1. And "bitrate controller is used to overcome two potential problems with (1) reducing too many bits for dropping too many coefficients and (2) too few coefficients being dropped. A simple TM5 rate control is used to deal with these problems. It should be noted that the coefficient dropping starts with the non-zero high frequency coefficients towards the low frequency ones and DC coefficients are never selected for dropping" in paragraph 43, line 3. Thus, the bitrate controller can be used to limiting DCT frequency components during data processing.

It would have been obvious at the time the invention was made that, one of ordinary skill in the art would have been motivated to include the said data processing system of the Hannuksela and Klein Gunnewiek combination, with limited DCT frequency components as taught by Lee, not only this method can be "quickly adaptive to the dynamic changes of bitrate requirements for bandwidth-limited networked multimedia applications" in paragraph 44, line 7, but also a "consistent video quality may be maintained to some extent" in paragraph 23, line 9.

Regarding claim 8, pseudo-coded reference data generating unit performs

coding on only direct-current components obtained by limiting said frequency

components (as discussed in claim 7, "…and DC coefficients are never selected for

dropping" in Lee paragraph 43, line 9. Thus, the Hannuksela, Klein Gunnewiek, and

Lee combination teaches that other coefficients can be dropped and the DC

components can be the only frequency components used).

Regarding claim 9, first coding unit and said pseudo-coded reference data

generating unit use an MPEG-4 standard to code the image data ("The invention may

be implemented in other video coding protocols. For example MPEG-4 defines so-called

user data, which can contain any binary data and is not necessarily associated with a

picture. The additional field may be added to these fields" in Hannuksela paragraph

136, line 1. See also "Most video compression standards support spatial scalability.

FIG. 1 illustrates a block diagram of an encoder 100 which supports MPEG-2/MPEG-4

spatial scalability" in Klein Gunnewiek paragraph 5, line 1).

Regarding claim 12, the pseudo-coded reference data is used as a reference

image when the image data coded in the intercoding mode by said first coding unit is

decoded (discussed in claim 7 by Hannuksela that spare reference picture data, i.e.

pseudo-coded reference data, used to represent the lost reference picture during

intercoding decoding process).

Response to Arguments

a) Summary of Applicant's Remark:

"Claim 7 includes features, *inter alia*, that the pseudo-coded reference data is output when the coding process is performed in the intercoding mode, and the pseudo-coded reference data is not output when the coding process is performed in the intracoding mode" at response page 12, line 5.

Examiner's Response:

As discussed in claim 7 by Hannuksela for intracoding mode, there is no spare reference picture needed to output data stream. For intercoding mode, spare reference picture data used to represent the lost reference picture are multiplexed and outputted. Reference to the rejections above for further discussion.

b) Summary of Applicant's Remark:

"The Klein Gunnewiek et al. reference discloses a switch (switch 366) for outputting the enhancement data, in Fig. 3. The switch is for outputting the enhancement data to any frames of an I-picture, a P-picture, and a B-picture" at response page 12, line 9.

"The Hannuksela et al. reference discloses the bit stream including a further codeword SRPT, in Fig. 7. The SRPN disclosed in Hannuksela is supplemental information. That is, the SRPN is not the pseudo-coded reference data" at response page 12, line 20.

Examiner's Response:

As disclosed by Hannuksela that there is an indicator to identify a spare

reference picture, "... This "spare" reference picture may be used by a decoder to

decode the current frame if the default reference picture is lost for some reason ..." in

Hannuksela paragraph 19, line 11.   Furthermore, "an indicator is provided for forwardly

predicted frames not for backwardly predicted frames" in Hannuksela paragraph 22, line

1. Thus, this indicator, as used for intercoding mode, in combination of Klein

Gunnewiek's switch to output pseudo-coded intercoding mode data. Refer to the

rejections above for further discussion.

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Eueng-nan Yeh whose telephone number is 571-270-

1586. The examiner can normally be reached on Monday-Friday 8AM-4:30PM EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

<div align="right">

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